BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In the Matter of:	
Tamposi Family Investments Russell Avenue Site	CERCLA Petition No. 94-3

AFFIDAVIT OF PAUL R. GROULX

I, Paul R. Groulx, do state upon my personal knowledge:

1. I am employed by the U.S. Environmental Protection Agency, Region I, as an On-Scene Coordinator (OSC) for removal actions under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). I have worked as an OSC in Region I since 1980. The responsibilities of an OSC are to direct response efforts and coordinate all other efforts at the scene of a discharge or release.

2. I make this affidavit based on my memory, and also based on my review, within the past month, of documents in the EPA Site File for the Russell Avenue Site (the "Site"). Those documents include records compiled both by EPA and by the New Hampshire Division of Public Health Services.

3. On October 18, 1985, I joined representatives of New Hampshire and the City of Nashua in an inspection for possible asbestos contamination on the Russell Avenue Site. New Hampshire officials requested permission from the Tamposis for this

inspection by letter dated October 10, 1985 (attached as Exhibit A of this Affidavit). On November 12, 1985, the New Hampshire Department of Public Health Services notified the Tamposis of the presence of asbestos wastes on their property and enclosed a copy of the Inspection Report from the October 18 inspection (Exhibit B).

4. I conducted a second investigation of the Site in November 1985, having requested and received permission from the Tamposis beforehand (Exhibit C).

5. During these investigations, I noticed considerable amounts of asbestos wastes at the Site that were plainly visible to the naked eye. This exposed asbestos included friable baghouse-type asbestos wastes and friable and non-friable asbestos sheet scraps. Friable asbestos is a type of asbestos that is easily crumbled or pulverized and is considered extremely hazardous to human health, because its deterioration causes ongoing releases of asbestos fibers. The exposed asbestos was most prevalent along the surface of a steep fill slope at the end of Russell Avenue and at a terraced section at the toe of the slope. Exhibit D consists of representative photographs I took of this exposed asbestos.

6. As part of EPA's investigation in November 1985, I supervised the collection by Roy F. Weston, Inc., of samples of the asbestos wastes. A summary of that collection and its results is attached as Exhibit E. Exhibit E consists of charts

denoted as Figure 8A, Figure 8B, Figure 8C, and Figure 8D from the Comprehensive Site Investigation prepared by Roy F. Weston, Inc., and dated December 13, 1985. Figure 8A lists the sampling numbers and grid points for the samples. Figure 8B sets forth, for each of 39 samples taken, the station number or grid point of the sample; the depth in inches to asbestos from the top of the soil; the thickness in inches of the asbestos lens; and the type of asbestos. As Figure 8B makes clear, 14 of the samples were taken from asbestos deposits found on the surface of the ground. Figure 8C lists the samples recommended for analysis, and Figure 8D sets forth the analysis results.

7. Attached as Exhibit F is a plan denoting the locations of the sampling numbers and grid points, along with the property lines. The Tamposi property includes lots 63, 65 and 8. As the plan shows, about 30 of the asbestos samples were taken from the Tamposi property, indicating extensive asbestos deposits. Of those 30 samples, at least 10 were samples of asbestos found on the ground surface, as denoted in Figure 8B of Exhibit E.

8. In May 1986, the U.S. Agency for Toxic Substances and Disease Registry (ATSDR) released a health consultation that confirmed that the Site posed a public health risk from exposure to disbursed asbestos fibers (Exhibit G).

9. I do not agree with Celina Tamposi's statements in her Supplemental Affidavit (dated February 22, 1992) that the Tamposis cooperated with EPA and the State, worked closely with

me, and followed any instructions or recommendations given to them. The area requiring remediation included both the Tamposi property, which the Tamposis had said they would clean up; and property owned by residential abutters, which EPA was planning to clean up. In my discussions with Sally Tamposi, I made clear that EPA intended for the Tamposis to remediate their property before EPA remediated the abutting parcels. This was important because much of the contamination on the Tamposi land was on the sides of a steep slope or ravine down to a sewer line, and good engineering practices dictated that the contamination on this slope be remediated before contamination on the higher ground of the abutting residential properties. Although the Tamposis claimed they would cooperate, in fact they delayed so long that EPA was forced to remediate the higher ground at the abutting parcels first in order to be sure to finish before the end of the construction season. The Tamposis did not commence the cleanup of their parcel until EPA had completed its share of the work and was preparing to commence cleanup of the Tamposi property as well.

10. Attached as Exhibit H are samples of news reports collected in the EPA Site File which concern asbestos dumping in the Nashua-Hudson area. These news reports are dated prior to the Tamposis' acquisition of the Site.

Signed under the pains and penalties of perjury this 2nd day of February, 1995.

Paul R. Groulx

Groulx EXHIBIT A

STATE OF NEW HAMPSHIRE
DEPARTMENT OF HEALTH AND WELFARE
DIVISION OF PUBLIC HEALTH SERVICES

Sylvio L. Dupuis, O.D.
Commissioner
Department of Health and Welfare

William T. Wallace, Jr., M.D., M.P.H.
Director
Division of Public Health Services

Health & Welfare Bldg.
Hazen Drive
Concord, NH 03301
Tel. (603) 271-4501

October 10, 1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Tamposi Family Investment Properties
402 Amherst Street
Nashua, NH 03063

Subject: Tax Map #7, Tax Lot #8,63 & 65/Nashua/Russell Avenue

Dear Sirs:

Please be advised that the N. H. Division of Public Health Services' Office of Waste Management (Division) has requested the U. S. Environmental Protection Agency (EPA) to participate in the inspection of asbestos waste disposal conditions at several sites in the Nashua-Hudson area. Because your above-cited property is located in the general vicinity of a disposal site which is slated for inspection, the Division may wish to access your land during the inspection process. Such access would be for the purpose of more accurately determining the limits of the asbestos waste deposit in your neighborhood and for the purpose of assessing various improvement alternatives. Activities will be limited to a visual inspection of the property's surface and, in some cases, subsurface probing with a hand auger or shovel. Care will be taken to restore the ground surface as found.

The Division and EPA expect to be conducting inspections in your area on October 16 and 17, 1985. While it is not necessary for you to be present during the inspection process, the Division and EPA certainly welcome your participation.

Please telephone Pamela Sprague, toll-free, at 1-800-852-3345, extension 4656 if you wish to be present during the inspection or if you have specific objections to providing the Division and EPA access to your property for the purpose of this inspection. If the Division is not notified otherwise, we will assume permission for access is granted.

In the meantime, the Division would like to use this opportunity to also provide the following information concerning the general disposition of asbestos wastes in your community and the efforts now underway to address the situation. Hopefully, this information will help you to better understand the primary issues of concern:

Asbestos waste disposal sites exist throughout the Nashua-Hudson communities. These are the result of past dumping practices which made the wastes available for use as free, solid fill for a period of several decades. Thus far, approximately 90 individual properties have been identified as asbestos disposal sites in Nashua and Hudson.

Asbestos is a natural mineral which, when mined and reduced to a state of microscopic sized fibers, can be commercially utilized in a variety of familiar products. However, based on an accumulation of health studies, it is now recognized that asbestos can endanger human health. The inhalation of asbestos fibers is known to cause a debilitating and irreversible respiratory illness known as asbestosis, as well as lung cancer and another form of cancer known as mesolthelioma. The latency period associated with these diseases can involve several decades.

Site identification is the first and most important step in a comprehensive program by the Division and the Nashua-Hudson municipalities to provide long-term community health protection from the risks associated with human exposure to asbestos. While these risks are potentially serious, risk elimination is believed to be possible by implementing and practicing sound waste site maintenance and land use management techniques. The Division and the municipalities are committed to this effort. Numerous activities are now on-going to (1) identify and assess the condition of the various sites, (2) to improve conditions at those sites where such action is needed, and (3) to develop site maintenance and land use management programs for continued, long-term community protection.

Because inhalation is the exposure route of concern, it is important to prevent asbestos fibers from becoming airborne. This is the underlying objective in properly closing any asbestos waste disposal area and it can generally be accomplished by burying the wastes underground. As a natural mineral, asbestos is not water soluble and does not move through ground water to any appreciable extent. (Based on studies of other insoluble particles of similar size, the expected migration rate is approximately 1 to 10 centimeters per 3000 to 40,000 years). Because of its physical properties, the basic criteria for proper long-term asbestos disposal is to bury the wastes under an amount and type of cover which will protect the waste layer from resurfacing via the forces of frost and/or erosion. At present, the Divison recommends that asbestos wastes be covered by two feet or more of clean fill materials which are compacted, graded, seeded and maintained for long term erosion control, or that they be buried under pavement, concrete or another approved asbestos impervious material for which continued structural integrity is provided through long-term maintenance. The Division is also exploring other cover options, such as the use of geotextiles, which may provide functionally equivalent cover alternatives.

By providing the Division with the opportunity to inspect your property, you will be helping to address an important public health issue in your community. The Division appreciates your cooperation and will be happy to answer any specific questions you may have. Thank you.

Sincerely yours,

Pamela W. Sprague for

Timothy W. Drew, Chief
Bureau of Waste Management Engineering
Office of Waste Management
Division of Public Health Services

PHS/ldbd/4117j
cc: DB/TWN
Paul Groulx - EPA, Region I

Groulx EXHIBIT B

STATE (NEW HAMPSHIRE
DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH SERVICES

William T. Wallace, Jr., M.D., M.P.H.
Director
Division of Public Health Services

Health & Welfare Bldg.
6 Hazen Drive
Concord, NH 03301-6527
Tel. (603) 271-

November 12, 1985

Tamposi Family Investment Properties
Attn: Sally Tamposi
402 Amherst Street
Nashua, NH 03063

Subject: Asbestos Waste Disposal Site Investigation/Russell Avenue, Nashua,/Tax Map #7, Lot #8,63,65/

Dear Ms. Tamposi:

As you are aware, personnel from the N.H. Division of Public Health Services, Office of Waste Management (Division), the Environmental Protection Agency (EPA), and the Nashua Department of Environmental Health (NDEH) recently conducted an inspection of asbestos waste disposal conditions on your above referenced property. Enclosed, for your review, is a copy of the Division's inspection report, summarizing observations made during this preliminary inspection. Also enclosed is a basic fact sheet to help you to better understand this situation, and a booklet entitled A Guide to the Identification of Asbestos Disposed in Soil.

As you will note, the presence of exposed, friable asbestos has been identified on your property. This situation warrants corrective action to eliminate the risk of human exposure to asbestos fibers.

In light of this, the Division is hereby requesting you to voluntarily pursue the work necessary to properly close the asbestos waste disposal site on your property. The general scope of work will involve (1) precisely defining the area or areas of asbestos contamination, (2) determining feasible cover alternatives and (3) providing labor and materials necessary to implement the approved abatement alternative. The Division is prepared to provide the general technical assistance necessary to bring the project into compliance with accepted public health standards.

In addition to the Division making the above request, the EPA has been asked to continue its investigation on your land. The Division understands that you have already been asked to allow EPA to access to your property for this purpose. The information obtained from this additional investigation will be used to assist in evaluting responsible corrective measures at the site.

It is the Division's desire to work cooperatively with all involved parties during all phases of the required work. Please notify me (ext. 4524), Timothy Drew (ext. 4621) or Pamela Sprague (ext. 4656) at 1-800-352-3345 if you wish to voluntarily initiate and perform the work necessary to properly contain asbestos waste materials on your property. If the Division is not notified otherwise within 10 days of receipt of this letter, it will be assumed you have declined to directly participate in the voluntary site closure process. In that event, the Division and the EPA will consider other available alternatives for achieving site closure on your property.

Please feel free to contact the Division if you have questions regarding this matter. Every effort will be made to address your concerns. Thank you.

Sincerely,

John A. Minichiello
Assistant Director
Division of Public Health Services

JAM:bjh/3708w

cc: Hudson Board of Selectmen
Michael Kopenits
Paul Groulx
Dana Bisbee

ASBESTOS WASTE SITE INSPECTI REPORT
N.H. DIVISION OF PUBLIC HEALTH SERVICES
OFFICE OF WASTE MANAGEMENT
603-271-4656

I. Inspection Base Data

date: 10 / 18 / 85 initiation: ____ complaint dated ____/____/____

weather: Clear, Cool ____ follow-up to ____/____/____ inspecti

Breezy X neighborhood investigation

inspection method: (visual screening)/hand auger/shovel/test pits

inspector(s): Sprague (DPHS), Groulx (EPA), Tremblay (NDEH)

other file references: 7:75

II. Site Location

City/Town: (Nashua)/Hudson/Other

Street: Russell Avenue

Tax Map:/Tax Lot #: 7:8, 7:63, 7:65

U.S. G. S. Coordinates: 4, 729, 400 m North, 299,000 m East

U.S. G. S. Quad. Sheet: Nashua South Quad./#63A

Deed Reference: Hillsborough County, ____ Book, ____ Page

III. Site Ownership

Owner Name(s): Tamposi Family Investment Properties

Owner Address: Attention: Sally Tamposi
402 Amherst Street
Nashua, NH 03063

Owner Phone: 603-883-2000

Site is: owner occupied / tenant occupied / (unoccupied)

If tenant occupied, specify name(s), address(es), and phone(s):

IV. Site Conditions:

Type of Asbestos Present	Existing Condition	Potential Exposure Routes
___none found	(N/A)	(N/A)
X baghouse	(friable)/non-friable	none/(air)/surface water/(direct contact)
___full sized sheets	friable/non-friable	non/air/surface water/direct contact
___rolled sheets	friable/non-friable	none/air/surface water/direct contact
X sheet scrap	(friable)/non-friable	none/(air)/surface water/(direct contact)
___pellets	friable/non-friable	none/air/surface water/direct contact
___Other_____	friable/non-friable	none/air/surface water/direct contact

Cover types: (none)/(leaves,brush)/(soil)/(vegetation)/pavement/concrete/other _____

Estimated cover depths: 0 inches minimum and ? inches maximum.

Site Description: Friable baghouse type asbestos wastes and friable/non-friable asbestos sheet scrap, in varying sizes, prevalent along surface of steep fill slope at end of Russell Ave. and behind properties on north side of Russell Ave. Same material noted beyond terraced section at toe of slope, which appears to accomodate an underground sewer line. Here, material extends unknown distance into woods.

Anonymous telephone complaintant stated the area was used 50+ years ago by J-M as a dump. Material reportedly dumped was a "white slurry" and "full sized sheets". Complaintant described dump as having been extensive. This is consistent with observations.

Estimated population within 500 meter radius: not determined

Estimated distance to nearest occupied structure: -15 feet = -5 meters

Compass direction of above structure from site: Westerly

Compass direction of prevailing wind: not determined

Is site wholly or partially within 100-year flood plain? no / wholly / partially.

V. Land use development and management:

Current land use: undeveloped/commercial/industrial/recreational/educational/multifamily residential/single-family residential/religious/conservation/transportation/other: _____

Current zoning: residential

Underground utilities: municipal water/private well/electricity/gas/closed drainage/municipal sewer/private septic/other: (others not yet determined)

VI. Sampling Data

Asbestos at this site has been identified: visually/by lab

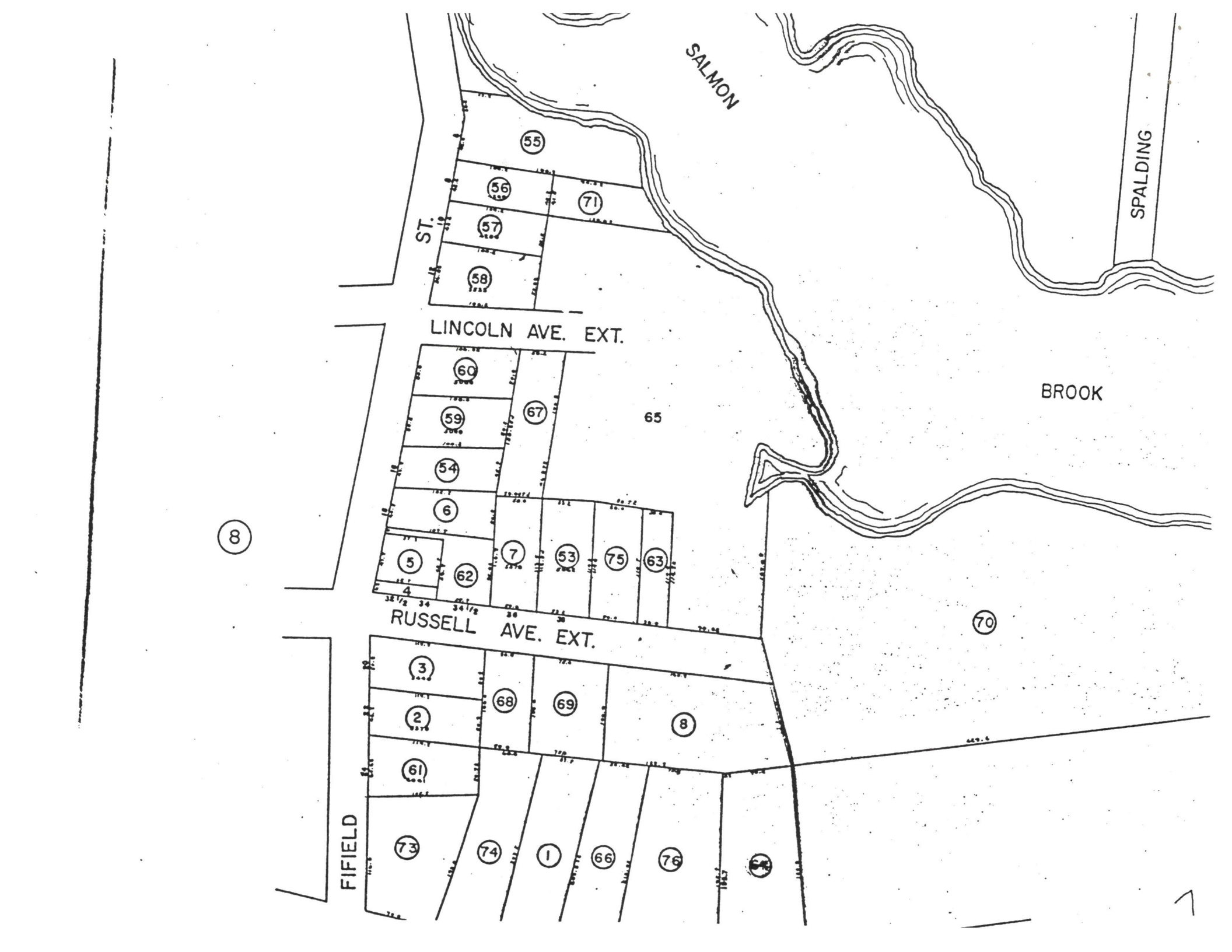
If sampling occurred during this inspection, complete below:

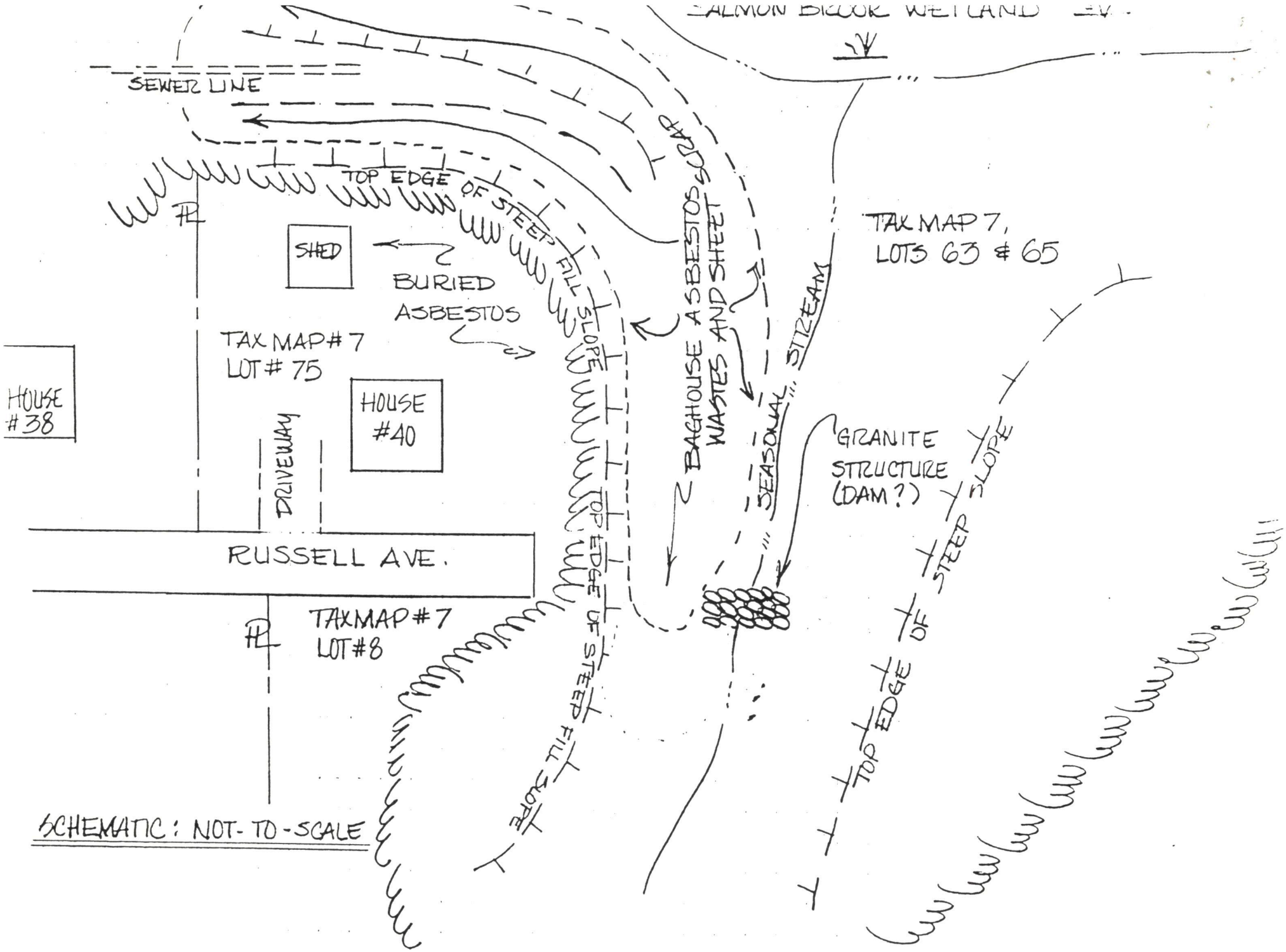
Sampling Location*	Visual Description	Lab Results
1. surface of slope	friable/baghouse	50% chrysotile asb t
2. surface of slope	friable/baghouse	50% chrysotile asb t
3.		
4.		
5.		

* So noted on attached site sketch

VII. Other Comments/Recommendations

Above sampling by EPA.


SALMON
SPALDING
BROOK
ST.
LINCOLN AVE. EXT.
RUSSELL AVE. EXT.
FIFIELD
55
56
71
57
58
60
59
67
65
54
6
8
5
62
7
53
75
63
4
70
3
68
69
2
8
61
73
74
1
66
76


SALMON BROOK WETLAND
SEWER LINE
TOP EDGE OF STEEP FILL SLOPE
SHED
BURIED ASBESTOS
TAX MAP#7 LOT# 75
HOUSE #38
HOUSE #40
DRIVEWAY
RUSSELL AVE.
TAXMAP#7 LOT#8
BAGHOUSE ASBESTOS WASTES AND SHEET SCRAP
SEASONAL STREAM
TAX MAP 7, LOTS 63 & 65
GRANITE STRUCTURE (DAM?)
TOP EDGE OF STEEP SLOPE
SCHEMATIC: NOT-TO-SCALE

Groulx EXHIBIT C

RECEIVED

NOV [illegible]

Division of
Public Health Services
Bureau of Hazardous Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173

November 1, 1985

Ms. Sally Tamposi
402 Amherst Street
Nashua, NH 02063

Re: Tax Map No. 07/Lot No. 08,63,65

Dear Ms. Tamposi:

This is to confirm my telephone conversation on October 31, 1985, with Mr. Samuel Tamposi, Sr., to obtain permission for the U. S. Environmental Protection Agency, and its contracted personnel, to enter your property. We have been requested by the State of New Hampshire Department of Health and Welfare, Division of Public Health Service to assist in this investigation.

To further our preliminary investigation, gather additional information, and to assess the extent of asbestos contaimination on the property, we will be perfonming hand corings into the ground. This will enable us to define the extent of asbestos in the area. The coring grid will be on 50 foot grid lines. This relates to six holes on a parcel of property 100x50 feet. These holes will be covered, leaving no evidence of any disturbances.

This will also include surveying the property to identify its bounds, whereby coring samples determine the extent of the asbestos at the property. This work will be performed during the month of November.

In order not to confuse any issues, we are at the present time only gathering information, so that a more comprehensive assessment of the situation may be made. It should be noted that all data gathered by the Agency on your property, is available to you. This can be obtained by submitting a written request for the information.

Enclosed are two (2) written permission signature forms authorizing these activities. Please read and sign one to be returned in the enclosed envelope. The second is for your records.

I would like to thank you for your cooperation and support on this matter. If further questions arise, please contact me at (617) 861-6700 or (617) 223-7265.

Sincerly,

Paul R. Groulx

Paul R. Groulx
Federal On-Scene Coordinator
Oil & Hazardous Material Response Section

Enclosures

cc: Pamela Sprague, State of New Hampshire, Concord, NH

EXHIBIT D

Photographs by Paul Groulx of Asbestos on Tamposi Property, Russell Avenue, Nashua N.H.

FIGURE 8A

SAMPLING NUMBERS
RUSSELL AVE.

Sample #	Grid Point	
54080	E0+50	S50
54081	E0+50	S25
54082	E1	S25
54083	E2	S25
54084	E1	S50
54085	E2	S50
54086	E1+50	S50
54087	E2+83.6	S50
54088	E1+50	S25
54089	E2	S75
54090	E1+50	S75
54091	E2+50	S25
54092	E2+50	S50
54093	E2+50	S75
54094	E2+50	
54095	E2+83.6	S74
54096	E0+50	S75
54097	E1+50	N25
54098	E0+50	N25
54099	E1	N25
55204	E3+00	S50
55205	E1+00	S60
55206	E1+50	S85
55207	E1+50	N50
55208	E2+00	S85
54102	E1+00	S125
54103	E1+00	S75
54104	E0+50	S100
54105	E2+00	S100
54106	E1+00	S100
54107	E0+75	S100
54108	E2+25	S100
54109	E1+50	S100
55098	E1+75	W75
55099	E1+75	N50
55110	E2+25	N100
55111	E2	N50
55112	E2	N100
55113	E2	N75
55114	E2+50	N50

* See Drawing #2 for sample point locations.

FIGURE 8B

CORING RESULTS
RUSSELL AVENUE ASBESTOS SITE
NASHUA, NH

1	2	3	4
STATION NUMBER	DEPTH to ASBESTOS (inches)	ASBESTOS LENS THICKNESS (inches)	TYPE OF ASBESTOS
E0+50S25	12	12-18,RF	BH,PL
E0+50S50	18	18,RF	PL
E0+50S75	18	18	PL
E0+50S100	2	2-12	PL
E0+50N25	12	12-18,RF	BH
E0+75S100	16	16-20	BH
E1S25	SF	0-16,RF	BH,PL
E1S50	SF	0-18,RF	BH,PL
E1S60	7	7,RF	PL
E1S75	2	2-18	BH
E1S100	2	2-12	BH,PL
E1S125	8	8-24	BH
E1N25	2	2-24,RF	BH,PL
E1+50S25	SF	0-6,RF	BH,PL
E1+50S50	SF	0-6,RF	BH,PL
E1+50S75	SF	0-6,RF	PL

RUSSELL AVE.

1	2	3	4
E1+50S85	SF	0-3,RF	BH,PL
E1+50S100	6	6-12	BH,PL
E1+50N25	3	3-30	BH,PL
E1+50N50	SF	0-8,RF	BH,PL
E1+75N50	SF	0-30	BH
E1+75N75	3	3-30	BH
E2S25	6	6-30	BH,PL
E2S50	6	6-30	BH
E2S75	SF	0-1,12-14	BH
E2S85	SF	0-3,RF	BH,PL
E2S100	SF	0-8,RF	BH,PL
E2N50	14	14-22,RF	BH,PL
E2N75	2	2-30	BH
E2N100	6	6	BH
E2+75S100	6	6-14,20-30	BH,PL
E2+50S25	SF	0-18	BH,PL
E2+50S50	SF	0-18,RF	BH
E2+50S75	6	6-8,12-18,RF	BH,PL

RUSSELL AVE.

1	2	3	4
E2+50S100	SF	0-1	PL
E2+50N50	2	2-8	BH
E2+83.6S50	2	2	PL
E2+83.6S74	4	4-25	BH,PL
E3S50	3	3-6,RF	BH,PL

NOTES: SF - Asbestos deposits found on ground surface
RF - Coring refusal due to asbestos layer
BH - Baghouse asbestos waste
PL - Plate and board asbestos waste

FIGURE 8C

RUSSELL AVENUE, NASHUA, NH

RECOMMENDED SAMPLES FOR ANALYSIS:

Sample #		Description
54091	(E2+50,S25)	Gray baghouse and tile
54082	(E1,S25)	White baghouse and board
54081	(E0+50,S25)	Red and white baghouse; black board
54084	(E1,S50)	White baghouse and board
54098	(E0+50,N25)	Green and white baghouse

*See Figure #8D for sample analysis results.

FIGURE 8D

SAMPLE ANALYSIS RESULTS

Sample Description	Contents
Russell Ave. Hazardous Waste Site Nashua, NH	
#54091 White/tan & grey when dry (Grid Point #E2+50,S25)	Asbestos (chrysotile) - 35% Cellulose - 8% Nonfibrous material - 58%
Baghouse, white/tan-grey When dry	Asbestos (chrysotile) - 52% Cellulose - 2% Nonfibrous material - 46%
#54098 Green-white when dry (Grid Point #E0+50,N25)	Asbestos (chrysotile - 37% Cellulose - 1% Nonfibrous material - 62%
White material	Asbestos (chrysotile) - 32% Cellulose - 2% Nonfibrous material - 66%
#54082 White material (Grid Point #E1,S25)	No asbestos present Cellulose - 15% Nonfibrous material - 85%
Black board	Asbestos (chrysotile) - 55% Cellulose - 10% Nonfibrous material - 55%
#54081 Black soil with white material dispersed throughout (Grid Point #E0+50,S25)	No asbestos present Fibrous glass - 5% Cellulose - 20% Nonfibrous material - 75%
#54084 Tan board (Grid Point #E1,S50)	Asbestos (chrysotile) - 15% Cellulose - 15% Nonfibrous material - 70%
Soil and white material	No asbestos present Fibrous glass - 5% Cellulose - 20% Nonfibrous material - 75%

Groulx EXHIBIT G

DEPARTMENT OF HEALTH & HUMAN SERVICES

11 SEP F 11 SEP E
Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

MAY 13 1986

From: Acting Director
Office of Health Assessment

Subject: Health Assessment, Nasuhua, New Hampshire
Asbestos Sites: Nowell Street (SI-86-056), Russell Avenue (SI-86-057), West Bank of Merrimack River (SI-86-058), 44 Broad Street (SI-86-059), Oakland Avenue (SI-86-060), 17 Niquette Drive (SI-86-061), 13 Niquette Drive (SI-86-062), Wason Road (SI-86-063), and Lot # 7 Industrial Drive (SI-86-064).

To: Ms. Marilyn Disirio
Public Health Advisor
EPA Region I

EXECUTIVE SUMMARY

Environmental Protection Agency (EPA) Region I has requested Agency for Toxic Substances and Disease Registry (ATSDR) to review nine separate asbestos waste sites in and around Nashua, New Hampshire. All nine sites exhibit some potential threat to public health in that all contain asbestos waste products that are more or less subject to dispersal in the general environment of Nashua, thus placing the local population at risk of exposure to greater than normal background levels of asbestos. ATSDR recommends that all sites be eventually remediated, and proposes a priority grouping of sites with respect to their potential for causing unnecessary human exposure to asbestos.

BACKGROUND

EPA has requested ATSDR to provide health assessments of the subject nine individual asbestos waste sites located in or near the town of Nashua, New Hampshire. All nine sites were allegedly created, directly or indirectly, through operations of the Johns Manville Corporation over a period of 15 years beginning in the 1960s. The major forms of asbestos waste placed at these sites were baghouse, pelletized waste, and sheet scrap; of these forms, baghouse is the most friable and consequently poses the greatest threat to public health. A brief site summary, excerpted from the material submitted for review (see following section), follows for each of the sites.

94-0059

The Nowell Street Site is an undeveloped parcel of land of approximately 1/3 acre located in a densely populated neighborhood of one- and two-family homes. The site is bordered on the north by Nowell Street, on the south by Salmon Brook, and on the east and west by residences. The terrain is flat and covered with grass and weeds. Asbestos waste (both plate and friable baghouse) is visible in several areas with little or no ground cover. There are no barriers to access to the site; a footpath traverses one end of the property.

The Russel Avenue Site is an undeveloped tract of land consisting of three privately owned lots with a combined area of two acres. The site is bordered by residential lots except for the northeastern side, which is bordered by Salmon Brook. The topography ranges from a steep embankment on the southern and western boundaries to the low, flat, marshy area at the northeastern edge of the property bordering Salmon Brook. Baghouse waste and sheet scraps are present on and below the surface of the embankment along the southern and western boundaries of the site. Several existing footpaths cross the site.

The West Bank Site is an undeveloped tract of land consisting of a one-acre parcel of city-owned land; the site is a section of a larger piece of property bordered on the east by the Merrimack River. An earthen dike on the west bank separates the site from Crown Street; there is a 1:2 slope from the dike to the river. Small trees and underbrush cover the terrain. Asbestos board waste covers 60% of the slope; the asbestos is open to weathering and has very little cover. Asbestos "caves" have occured on the slope as a result of erosion.

44 Broad Street is commercially zoned and operating as Plywood Ranch, a home remodeling center. The site is bordered to the north by Broad Street, to the west by a residential house, to the east by railroad tracks

then additional light industry, and to the South by the Nashua River. Along with a building, the site has a parking lot for customers. The slope behind the building has asbestos waste scattered all over it; the waste consists of baghouse and all types of asbestos waste board.

The Oakland Avenue Site is a vacant lot in a residential area. Steep slopes enclose the lot on the east, west, and south; the north end of the lot abuts a wet area adjacent to Salmon Brook. A dirt foot path touches one corner of the site. All types of asbestos waste was found on the site, including one 55-gallon drum containing friable baghouse.

17 Niquette Drive is a one-acre residential lot with a single family house on it; the lot is bordered to the south by Salmon Brook, to the north by Niquette Drive, and to the east and west by other residential lots. The grounds are well kept and extensively landscaped. Both asbestos board and baghouse were noted to be scattered about the property; many walkways are made up of pieces of asbestos board.

13 Niquette Drive is an approximately one-acre lot with a single family house, fencing, trees and a small stone wall surrounding a garden in the back yard. The lot is bordered by Salmon Brook, Niquette Drive, and residences on either side. Pieces of asbestos board and baghouse waste were found in the garden.

Wason Road is a two-acre residential lot with a single family house. The site is bordered on the south and west by residential lots, and on the north and east by Wason Road and Gregory Street, respectively. The site is divided into halves: on half is the house, a pool, and a well kept lawn; the other half is clear of trees at the front on Wason Road but wooded at the back. The essentially vacant portion of the lot was the portion investigated by EPA and found to contain asbestos waste materials, most of which was covered by natural material.

Lot # 7 Industrial Drive (located in Hudson, New Hampshire) is an area of light industry of approximately two acres with no buildings or permanent structures; one third of the site is wooded, the remainder having little vegetation. There is a a gravel road leading to and and going into the site that is blocked by boulders. The property is a very seldom used vacant lot with surrounding light industry. A high mound area of fill was found to have baghouse asbestos under approximately four inches of cover material. The presence of asbestos caused a halt to the development of the site as a food processing facility.

DOCUMENTS REVIEWED

A preliminary investigation site report, prepared by EPA Region I contractor Roy F. Weston, Inc., was submitted for review to ATSDR for each of the nine sites.

DISCUSSION

All nine sites were documented to be contaminated with asbestos waste with varying potential for air- and waterborne dispersal into the environment and thus for exposure of at-risk human populations.

Since asbestos is classified as a zero-threshold human carcinogen, any quantity, no matter how minute, of asbestos fibers should be considered a human carcinogen. If asbestos waste contamination of the environment occasions human exposure to asbestos beyond what would obtain in the absence of the contamination, then the asbestos contamination constitutes a public health threat that should be remediated or mitigated. However, quantifying the magnitude of the potential for asbestos dispersal and the resulting human exposure in these settings is probably not feasible. Even if such a quantification were feasible, it would be so costly to accomplish in terms of measurements that would have to be taken and so uncertain in terms of predictive value, that it would not be worthwhile.

Even though the sites cannot be quantitatively assessed and compared with one another, however, reasonable qualitative judgments can be brought to bear on the general nature of the public health threat posed by the sites. The sites can be qualitatively characterized as to their probable potential for causing asbestos to be dispersed by air or water and hence possibly to cause human exposure. Although such a qualitative approach perforce would not permit a strict ranking of the sites, they can be grouped with respect to their likely potential to occasion unnecessary human exposure. The sites can reasonably be placed in three such groups:

Group I:

13 Niquette Drive
17 Niquette Drive
Nowell Street
Oakland Avenue
Russell Avenue

These sites are all located in populated neighborhoods; all have exposed asbestos contamination in varying degrees that is subject to dispersal in the air and migration by water runoff. In the case of the two Niquette Drive sites it can be assumed that residents work (gardening, yard maintenance such as mowing) or play (digging in soil, etc.) in areas that are contaminated; the residents themselves are therefore subject to unnecessary exposure and their activities possibly cause additional dispersal of asbestos fibers in the immediate neighborhood. The other three sites all are subject to some degree of human traffic (two have footpaths crossing some part of the site, one is entirely accessible). All five sites should be remediated so as to prevent exposure of both the sites' residents and neighboring populations.

Group II:

44 Broad Street
West Bank

These two sites represent an intermediate degree of public health hazard among the nine sites. Although the 44 Broad Street Site is not in a heavily residential area and has minimal direct human traffic across contaminated areas, the site is near the parking lot of the retail establishment at the street side of the property. Air dispersion of friable asbestos might put customers at unnecessary risk of exposure. The proximity of the bordering Nashua River, described to be down-gradient of the site (the property slopes north to south, with the river forming the southern boundary), represents an additional mode of dispersal of contamination via normal water runnoff. The West Bank Site is a more extreme case in this last respect: there is a very high potential for asbestos waste generally scattered along the steep embankment that comprises the site to be washed into the Merrimack River and to be dispersed along its banks downstream. Both these sites should also be remediated.

Group III:

Industrial Drive
Wason Road

These remaining two sites pose the least degree of public health hazard among the nine sites inasmuch as most of the asbestos waste on those sites is covered. In the case of Wason Road, even though the contaminated portion of the site comprises the side yard of a residential lot in a residential neighborhood, the asbestos is reported to be essentially all covered with natural material. Although efforts should be made to ensure that all asbestos waste is in fact covered and remains so, this site would

appear to pose little immediate hazard. If the waste material becomes exposed because the soil is disturbed for any reason, then this site would appear to be no less hazardous the the Group I sites. The Industrial Way Site is in an unpopulated non-residential area; the asbestos waste is described to be generally covered with four inches of soil and the site is being monitored by state and local agencies. If all these conditions continue, this site should not pose an immediate health hazard, althouth the potential for one remains as long as the asbestos remains on the site and is subject to being disturbed by building excavations, etc.

CONCLUSION/RECOMMENDATION

In so far as all nine sites have been documented to be contaminated with asbestos waste that could be disperesd into the air or water through natural means or by human activity, all pose some degree of elevated risk for cancer to any human populations who might become exposed to the dispersed asbestos fibers. The sites noted under Group I (13 Niquette Drive, 17 Niquette Drive, Nowell Street, Oakland Avenue, and Russell Avenue) appear to pose the greatest potential for causing excess exposure and accordingly should be remediated as feasible. The Group II sites (44 Broad Street and the West Bank of the Merrimack River) appear to pose an intermediate degree of excess human exposure and should also be remediated; if some reason it is necessary to priortize and stage remedial efforts at the nine sites, these two sites could reasonably be addressed after the Group I sites, providing some instutional control is established to limit direct public access to the sites. The remaining two sites (Industrial Way and Wason Road) do not pose an immediate public health threat but should be monitored to ensure that current conditions at the sites do not change appreciably and that soil coverage of asbestos contamination remains intact.

We hope these comments will be useful in your future work on these sites.

Jeffrey Lybarger, M.D.